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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,696	04/02/2004	Shun Ying Liang	BHT-3123-123	9734

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EXAMINER

NGUYEN, HOA CAO

ART UNIT PAPER NUMBER

2841

DATE MAILED: 06/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Period for Reply

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 April 2004.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date *None*.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Should applicant desire to obtain the benefit of foreign priority under 35 U.S.C. 119(a)-(d) prior to declaration of an interference, a translation of the foreign application should be submitted under 37 CFR 1.55 in reply to this action.

Claim Objections

2. Claims 1-5 are objected to because of the following informalities:

Claim 1: The "the daughter board" is not an inventive element announced previously in the claim. Because the daughter board is later announced in claim 2, the Examiner will not consider the limitation "the daughter board" in this claim.

Appropriate correction is required.

Claims 2 and 5: The limitation "said hard disk drive interface frame" is indeed the "interface frame" announced in claim 1. There is insufficient antecedent basis for this limitation in the claim. It is recommended that one of the "hard disk drive interface frame" or "interface frame" must be used.

Appropriate correction is required.

Claim 4: The limitations in claim 4 are dependent on claim 2; therefore, claim 4 must be a dependent claim of claim 2.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-5 are rejected under 35 U.S.C. 102(e) as being anticipated by Stamos et al. (US 20030206398).

Regarding claim 1, as shown in figures 2-6, Stamos discloses a hard disk interface device for industrial computers, characterized in that:

(a) a motherboard-daughter interface circuit board (see Examiner remarks below) is disposed on an interface frame 26 (a rack, par.19) at a rear end of a hard disk drive 34 (par.19) in an industrial computer; and

(b) an electric cable retaining hook (no number, considering the I/O connector assemblies shown in figure 2C as an electric cable retaining hook, also see examiner remarks below) is disposed on the interface frame.

It is noted that the limitations "such that if it is necessary to selectively change and expand the functions of the circuit board, only the daughter board is needed to change" and "to prevent the electric cable from drooping due to its weight which results an adverse affection to the quality of signal connections" are interpreted to only require the ability to so perform. In the case of product claim, only the structure of the claim distinguishes over the prior art. Furthermore, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987).

Examiner remarks:

(a) Regarding the "a motherboard-daughter interface circuit board", as shown in figure 3, Stamos disclose a backplane 42 (par. 19, considering as a motherboard) and controller module 36 (par.19; considering as a daughter board). The controller module is known to include at least an I/O card, hard disk drive controller, I/O interface, or disk drive interface which is connected to a motherboard or a main board; therefore, the module 36 is again considered as a daughter board.

(b) Regarding the "electric cable retaining hook", as shown in figure 2B, the Examiner considers the I/O connector assembly shown in the figure (no number) as an "electric cable retaining hook" in its broadest interpretation, because the limitation does not detail the structure of the "electric cable retaining hook". Therefore, any assembly, which holds the cable together, is regarded as an "electric cable retaining hook".

Regarding claim 2, Stamos discloses:

(a) the hard disk drive interface frame comprises:

(b) A plurality of penetrating holes thereon (formed on each chassis 28, see figure 4A),

(c) a retaining board (no number, the bottom section in figure 5), and a retaining hook (no number, see figure 2D, and Examiner remarks above) are disposed at a back side of the interface frame; and

(d) the mother-daughter circuit board comprises:

(e) An interface motherboard 42 (a backplane, fig.4A, par.21), and

(f) a daughterboard 36 (fig.3, par.19), and

- (g) the interface motherboard 42 is disposed adjacent to a surface of the hard disk drive 34 and has a hard disk drive connector 44c (fig.5, par.21) for directly connecting the hard disk drive to the interface motherboard;
- (h) a power supply connector 44a (fig.5, par. 21),
- (i) a signal connector 44b (par. 21), and
- (j) inherently related connecting terminal are disposed on the other side of the interface motherboard (to interface with a plurality of modules 36 or power supply for example), and
- (k) the power supply connector, signal connector and related connecting terminals are inherently extended from the plurality of penetrating holes of the hard disk drive interface frame to the back side of the hard disk drive interface frame (noted: most connector must extend through an opening), and
- (l) the daughterboard 36 (par.19) is mounted on the retaining board (the bottom surface of chassis 28) disposed on the back side of the hard disk drive interface frame, and
- (m) a symmetric signal connector (no number, shown on module 36 in fig. 3 for connecting module 36 to the backplane) is disposed on a side of the daughterboard for connecting to the signal connector disposed on the interface motherboard (at a final product), and
- (n) as shown in figure 2D, at least two connectors (no number) are shown on each module 36 (daughter boards) mounted onto a parallel side of the daughterboard for connection to external devices and inherently equivalent to a 4-channel multilane

connector (noted that the specification allow any equivalent connector, see specification, page 6, lines 17-20).

It is noted that the limitation "for connecting a 4-channel infini-band cable assemble at an end of the electric cable, so that all hard disk drives of the interface motherboard and the signal and function of the daughterboard are connected to a control center of the industrial computer" is interpreted to only require the ability to so perform. In the case of product claim, only the structure of the claim distinguishes over the prior art. Furthermore, it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987).

It is also noticed that the type of cable/connector is only a matter of choice for a particular application; therefore, it is also considered as the intended of uses (for a particular application).

Regarding claim 3, as shown in figure 2D, Stamos discloses the retaining hook disposed on the backside of the hard disk drive interface frame.

The limitation "hangs the electric cable parallel to the hard disk drive interface frame to enhance the stability of signal transmissions, and thus preventing the electric cable from occupying too much space and preventing the electric cable from drooping due to its weight which results an adverse affection to signal connections" is interpreted to only require the ability to so perform. In the case of product claim, only the structure of the claim distinguishes over the prior art. Furthermore, it has been held that a

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recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987).

Regarding claim 4, Stamos discloses every limitation as shown in claim 1 above.

Regarding claim 5, as shown in figures 2A and 2B, Stamos discloses the hard disk drive interface frame 26 comprises a plurality of interface motherboards..

It is noticed that the limitation "and the daughterboard, retaining board, and retaining hook are installed according to the quantity of the motherboards to achieve the installation of a plurality of mother-daughter interface circuit boards" is regarded as process claim limitation. In the case of structure claims, only the final product is patentable. Therefore, the limitation is not given patentability weight.

Citation of Relevant Art

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Cunningham et al. (US 6030242) disclose a self-centering panel-mounted connector assembly.

Harris et al. (US 6757177) disclose a stacked backplane assembly.

Chong et al. (US 6377471) disclose a disk drive interface with variably spaceable connectors.

Kim et al. (US 20040074082) disclose a tool-less modular removable hard disk drive (HDD) apparatus.

Ammon et al. (US 5018052) disclose a cable management apparatus for a computer workstation housing.

Huang (US 6927336) discloses an interworking interface module for telecommunication switching systems.

Cignoni (US 3710199) discloses an interchassis cable carrier.

Szolyga (US 6970349) discloses an expandable modular storage unit.

Stamos et al. (US 20030206398) disclose a method and apparatus for mounting a backplane in a chassis.

Shih (US 20050018388) discloses a redundant power supply wirelessly connected to motherboard.

Knapp et al. (US 6795632) disclose a system for managing slack in fiber optic cables connected to a circuit board.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa C. Nguyen whose telephone number is 571-272-8293. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

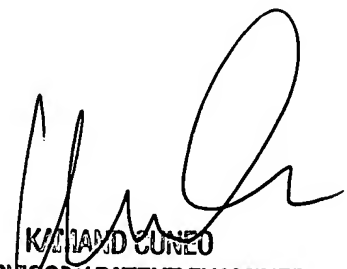
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

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Hoa C. Nguyen
6/22/06



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